

# Taking Aim: Hitting the mark on oil and gas methane targets



## Executive Summary

Environmental  
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# Attributions

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Methane is a fundamental challenge for the global oil and gas industry because of how much industry emits and how intensely methane impacts warming. Methane is responsible for one quarter of the warming we experience today<sup>1</sup> and the oil and gas industry is one of its largest manmade sources. With proven, low-cost technology solutions, minimizing methane emissions is a strategic opportunity that industry and society cannot afford to miss.

Natural gas, or methane, has emerged as the potent paradox for the energy industry. Methane is a valuable source of energy when successfully delivered to the market as natural gas. But too often methane is vented, leaked or flared as pollution. In a decarbonizing and increasingly competitive energy landscape, the climate performance of natural gas becomes an important metric for decision makers.

Each year, over 75 million metric tons of methane is emitted from the global oil and gas supply chain<sup>2</sup>, threatening our prospects of reaching a stable climate future<sup>3</sup> and causing unnecessary local air pollution.<sup>4</sup> As much as \$34 billion of global gas supply is lost each year,<sup>5</sup> enough to electrify Africa two times over if the wasted gas were put to productive use.

Leading companies are stepping forward in a number of areas, including improving reporting, accelerating technologies, and implementing best management practices. Positive examples of industry-led collective action already underway include: the Oil and Gas Climate Initiative, the Oil and Gas Methane Partnership, a set of global methane principles signed in November 2017 by eight leading operators, and One Future. Robust implementation of these early stage initiatives will be critical to ensure the solutions match the scope and magnitude of the problem.

<sup>1</sup> Radiative forcing metric used as a proxy for today's warming, with calculation as fraction of total positive radiative forcing from emitted species that is attributed to methane emissions. Data is from IPCC AR5 WGI 2013 Chapter 8 SM, Table 8.SM.6, and the calculation is corroborated by climate model simulations. There is new science since the IPCC report that finds that methane is even more potent (based on including its absorption of near-infrared radiation), and thus the 25 percent will likely be revised upwards; our internal analysis that includes this new data shows that methane accounts for 27 percent of today's warming.

<sup>2</sup> 2017 IEA World Energy Outlook (WEO) <https://www.iea.org/weo2017/>

<sup>3</sup> <http://science.sciencemag.org/content/342/6164/1323>

<sup>4</sup> <https://pubs.acs.org/doi/abs/10.1021/es4053472>

<sup>5</sup> EDF analysis based on IEA's 2017 WEO estimate of global oil and gas methane emissions and 2017 average natural gas prices from various regional markets as reported by Rystad Energy.

## In the coming years, industry's actions will determine:

- what level of verifiable methane emission reductions are achieved
- how methane emissions affect the future of gas, and
- which companies will lead or lag on managing methane risk as a competitive issue

With such questions looming for industry's future, institutional investors are becoming increasingly vocal about the need for companies to set targets. According to State Street Global Advisors, establishing company-specific climate emissions targets is "one of the most important steps in managing climate risk." EDF analysis, however, suggests that just six companies that represent only three percent of global oil and gas production currently report quantitative methane emission targets.

A targeted commitment from industry to reduce oil and gas methane emissions is the next frontier of climate risk management. A well-crafted and executed target shows a tangible step by industry to slow the rate of warming now and can help companies mitigate regulatory risk.

EDF intends the white paper to help industry leaders establish strong methane targets and to inform institutional investors, policy makers, and civil society as they evaluate methane targets in the months and years to come. We focus primarily on upstream oil and gas operations, which, according to the International Energy Agency (IEA), account for more than three quarters of the industry's methane emissions. However, methane target setting can be a valuable tool across the supply chain, and many of the same considerations outlined here apply.

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## As oil and gas producers design and implement methane targets, EDF recommends:

### Emissions from Oil Production – Not Just Gas Value Chain – Must be Targeted:

IEA estimates more than half of upstream methane emissions come from oil production. Targets encompassing upstream must include all emissions from oil and gas production, including both stranded and marketed associated gas. The oil and gas industry cannot credibly position natural gas as a climate solution while emitting large amounts of methane from oil-heavy fields.

### Non-Operated Assets Are Key to Scale Impact:

With joint ventures permeating the global industry landscape, companies with worldwide presence that set targets should also work with their partners to reduce methane emissions in non-operated assets.

### Absolute Targets Are Preferable – 75 Percent Emission Reductions are Feasible:

Companies should implement absolute targets to reduce methane emissions. IEA analysis and demonstrated industry experience suggest that corporate commitments to reduce methane emissions 75 percent by 2025 are feasible. A 75 percent emission reduction by 2025 is a milestone on the pathway toward virtually eliminating wasteful emissions of natural gas.

### 0.20 Percent Leakage Rate Feasible for Production:

Intensity targets will be assessed on whether they deliver strong environmental outcomes, even in industry growth scenarios. The reported experience of industry leaders suggests that it is feasible to achieve a 0.20 percent or lower methane intensity rate, calculated as total methane emissions from oil and gas production<sup>6</sup> divided by total natural gas production. Intensity targets lack certainty on environmental outcomes, and any intensity goal will need to address this issue.

### Use and Report Rigorous Data and Analysis:

Rigorous emission measurement and statistical analysis should set the foundation for industry reporting on methane targets. Field measurement at site and basin levels is necessary to identify “fat tail” leaks and accurately assess progress on targets. Public disclosure of data and methods supports the credibility of a methane target program. Companies should engage qualified independent experts for valuable review and validation.

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<sup>6</sup> Appendix discusses alternative intensity target metrics and how they can be compared

In governments, investment firms, and communities around the world, calls to reduce methane emissions are gaining remarkable momentum. How industry responds to these calls will inform each company's role in tomorrow's energy market. Companies that seize this opportunity can differentiate themselves to investors and others. In concert, leaders can mitigate the risk that unchecked emissions create backlash that harms the entire sector.

Now is the time to design and implement ambitious methane emission targets. We hope this white paper helps companies set methane targets with urgency and resolve.

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